ISSN : 2949 - 9100

International Journal of Health and Dentistry Care (IJHDC)

IJHDC : Health and Dental Publication
Available Online at: www.ijhdc.com
Volume – 4, Issue – 3, May – June – 2025, Page No. : 13 – 21

Smartphone Dependency and Digital Amnesia: Iceberg of Social Media platform with Deep Hidden Amnesic Effects in Human

[1]Lamia A. E. Hakeem, Psychiatric Mental Health Nursing, Faculty of Nursing, Cairo University, Giza, Egypt

[2]Maha I. E. Bayoumy, Community Health Nursing Department, Faculty of Nursing, Cairo University, Giza, Egypt

Corresponding Author: Lamia A. E. Hakeem, Psychiatric Mental Health Nursing, Faculty of Nursing, Cairo University, Giza, Egypt.

Citation This Article: Lamia A. E. Hakeem, Maha I. E. Bayoumy, "Smartphone Dependency and Digital Amnesia: Iceberg of Social Media platform with Deep Hidden Amnesic Effects in Human", IJHDC – May – June – 2025, Volume. – 4, Issue – 3, P. No. 13 – 21.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

In the digital era, the omnipresence of smartphones and social media has significantly altered the way young adults store, access, and recall information. This paper explores the phenomenon of Digital Amnesia—the tendency to forget information that can be easily retrieved from digital devices—and frames it as the tip of an iceberg, with profound psychological and cognitive effects hidden beneath the surface. Social media platforms, while offering connectivity and convenience, contribute to the externalization of memory, reducing the brain's engagement in information retention and recall processes. Through a survey-based study conducted among undergraduate students, the research identifies behavioral patterns such as dependence on digital reminders, frequent use of search engines for previously learned information, and reduced memorization efforts. These behaviors, though normalized, signal a gradual decline in cognitive endurance and memory performance. The study further investigates the emotional impact of digital dependence, including anxiety and stress in the absence of devices. To address these challenges, the paper proposes practical interventions such as digital detox strategies, cognitive training exercises, mindful use of technology, and educational awareness programs that encourage balanced device usage. By uncovering the deeper layers of digital amnesia and suggesting actionable solutions, this study aims to empower young adults to regain control over their cognitive health in a hyper connected world.

Keywords: Digital Dependence, Digital Amnesia, Health Issues, Psychology, Intellectual, Emotional.

Introduction

In the current digital era, where social media platforms and smart devices dominate the daily lives of young adults, a growing concern has emerged: Digital Amnesia. This term refers to the phenomenon in which individuals increasingly depend on digital technologies—such as social media, smart phones, and search engines—to store and retrieve information, leading to a deterioration in their ability to remember and retain information independently.[1] While digital tools offer unparalleled convenience, they also come with cognitive costs, particularly the erosion of traditional memory processes. Young adults, in particular, seem to be at the center of this digital shift, relying more on external devices than their internal memory to store and access knowledge.[2] The effects of Digital Amnesia can be likened to an iceberg. On the surface, the visible symptoms include forgetfulness, trouble recalling facts, and an overreliance on Google or digital assistants for simple information.[3]

However, beneath this apparent memory loss lies a broader, more insidious set of consequences that are often hidden from view. These deep, "hidden" effects involve cognitive changes such as a decline in memory retention, reduced attention spans, diminished ability to engage in critical thinking, and compromised problem-solving skills. Such effects may go unnoticed until they begin to affect academic performance, mental health, and interpersonal relationships.[4] While social media and smart phones offer immediate rewards, they often encourage shallow, distracted processing of information.[5] The constant flow of notifications and the habit of multitasking can reduce the brain's capacity to focus, making it harder for young adults to engage deeply with information and retain it in long-term memory (Rosen, 2017). Furthermore, excessive social media use has been linked to feelings of loneliness, depression, and anxiety, which can further exacerbate cognitive difficulties and memory lapses.[6] This study aims to explore the iceberg of Digital Amnesia by examining both the visible and hidden effects of social media on the cognitive functioning of young adults. It will investigate how these digital behaviors interfere with memory formation, attention, and critical thinking, while also assessing the psychological consequences associated with heavy social media use. Moreover, this research will propose strategies and interventions to mitigate the detrimental effects of Digital Amnesia. By offering recommendations for more mindful technology usage, deeper learning methods, and healthier lifestyle choices, this study will seek to provide young adults with the tools to regain control over their cognitive health and enhance their ability to retain and process information in the digital age.

Aim and Objective of the study

The primary aim of this study is to explore the concept of Digital Amnesia in young adults, particularly examining how social media and digital tools contribute to the erosion of memory, attention, and cognitive function. This research seeks to investigate the iceberg-like effects of Digital Amnesia—highlighting both the visible symptoms and the deeper, hidden cognitive and psychological consequences. Ultimately, the study aims to propose actionable strategies to mitigate these effects and empower young adults to regain control over their cognitive health, reducing their dependence on technology for memory retrieval.

Objectives of the study

1. To Assess the Prevalence of Digital Amnesia:

2. To Examine the Impact of Digital Amnesia on Cognitive Function:
3. To Provide Recommendations for Policy and Practice:

Digital Amnesia cause only destruction

A study conducted in Europe, India, and the United States found that a significant number of individuals could not recall their phone numbers at the age of 15, and even fewer could remember the contact numbers of their spouses or children. Statistically, 80% of individuals now depend on their digital devices to a greater extent than they did five years ago. This reliance on technology serves as a convenient and dependable method for storing information. Concurrently, our cognitive processes are also evolving in response to these changes.

Over-reliance on digital devices can also be problematic if:

- Information is needed to be readily available when there is no access to digital storage or to a search engine.
- Information is crucial to remember since one cannot afford to rely only on a digital backup.
- Information is required to be internalized and remembered in the long-term.

In addition to the negative impact on memory, media reports have prompted mental health experts to discuss the prevalence of behavioral issues such as attention deficit, increased irritability, and heightened aggression. Furthermore, manifestations of depression, anxiety, panic attacks, and post-traumatic stress disorder have been associated with digital amnesia. As a result, psychosocial factors such as diminished self-esteem, low self-confidence, and a weakened sense of identity have also emerged as significant concerns. These behavioral and psychological symptoms have been observed in individuals who either misplaced their smart phones, which contained a wealth of personal and professional information, or experienced data loss due to malicious actions by third parties.

Theoretical connections exist between digital amnesia and smartphone addiction. It is suggested that the distractions resulting from multitasking on smartphones contribute to difficulties in forming long-term memories and increased memory loss. Additionally, it is posited that such distractions disrupt sleep patterns, leading to interruptions. These interruptions in sleep further hinder the process of synaptic pruning, thereby impairing the capacity to retain new information and create new memories.

Can we prevent digital amnesia?

Whilst addressing the preventive aspect of digital amnesia, a quick check on the identification can be of great help.

There are some questions that one can address, either to the self or another, in order to check if there has been a crawling effect of digital device usage on their memories:

- Where have you been storing your data- has it always been any of the digital devices?
- Have you been spending excessive time on digital media?
- Has your pattern of communication transformed to become only virtually?
- Have you been observing an adverse impact on your work- have you been experiencing Forgetfulness, unfinished tasks, forgotten responsibilities?
- Are you unable to imagine a technology free zone?
- Do you feel amiss without your digital device?

How to manage digital amnesia? Here are some tips shared by the expert:

1. Practice Mindful Technology Use:
- Set specific times for using digital devices and avoid unnecessary distractions.
- Limit the number of apps and notifications to reduce information overload.
- Take regular breaks from screens and engage in offline activities to rest your mind.
2. Use Memory Enhancement Techniques:
- Practice active recall by trying to remember information without relying on digital devices.
- Take handwritten notes instead of typing to improve memory retention.
- Engage in mental exercises such as puzzles, brain games, and mnemonic techniques to strengthen memory.
3. Prioritize Quality Over Quantity:
- Focus on consuming high-quality, meaningful content rather than mindlessly scrolling through social media feeds.
- Be selective about the information you choose to store digitally, prioritizing important and relevant data.
4. Build Real-Life Connections:
- Foster meaningful relationships with family and friends through face-to-face interactions.
- Participate in social activities and community events to strengthen social connections and emotional intelligence.
5. Practice Digital Detox:
- Set designated periods of time each day or week where you disconnect from digital devices completely.
- Use this time to engage in activities that promote relaxation, creativity, and mindfulness.
6. Stay Physically Active:
- Incorporate regular physical activity into your routine, as exercise has been shown to improve cognitive function and memory.
- Take breaks to stretch and move around throughout the day to combat the sedentary effects of digital device use.
7. Seek Professional Help if Needed:
- If you find that digital amnesia is significantly impacting your daily life or mental well-being, consider seeking support from a mental health professional.
- Therapy or counseling can provide strategies for managing technology use and improving cognitive function.

Material & Methods

- Study Design: Cross sectional study
- Study Population: Young Adults (15 to 25 yrs.)
- Sample size: 320
- Sample size= 4 pq/ L^2

Confidence level= 95%

Allowable Error= 20%

Considering P= 25, Q=75

According to formula, Sample size is 320

Inclusion criteria

1. Age Range: Young adults aged between 18 to 25 years old.
2. Digital Device Usage: Individuals who use digital devices regularly, including smartphones, tablets, laptops, and desktop computers.
3. Social Media Engagement: Individuals who actively use social media platforms such as Facebook,

Instagram, Twitter, Snapchat, etc. Social media usage is a significant contributor to digital amnesia.

4. Language Proficiency: Proficiency in the language(s) of the study materials (e.g., English) to ensure accurate comprehension and communication.

Exclusion criteria

1. Medical Conditions
2. Substance Abuse: Individuals with a history of substance abuse or addiction that may impact cognitive function or memory.
3. Neurological Disorders: Individuals with diagnosed neurological disorders that may affect cognitive function or memory (e.g., epilepsy, multiple sclerosis).

- Non-Consent: Individuals who do not provide informed consent to participate in the study. Obtaining informed consent is essential for ethical research practices and should be a prerequisite for inclusion in the study.

4. Language Barrier: Language barrier may impede accurate data collection and interpretation.

Methods: After obtaining the permission from ethical committee, we have started data collection. Data was collected by self-structured questionnaire generated on Google form (single response only) to be filled by young adults in India. we have obtained the written consent for the study. Data were collected in pre tested, pre formed validated questionnaire.

Result

Table 1: questionnaire on Digital Amnesia among undergraduate Students

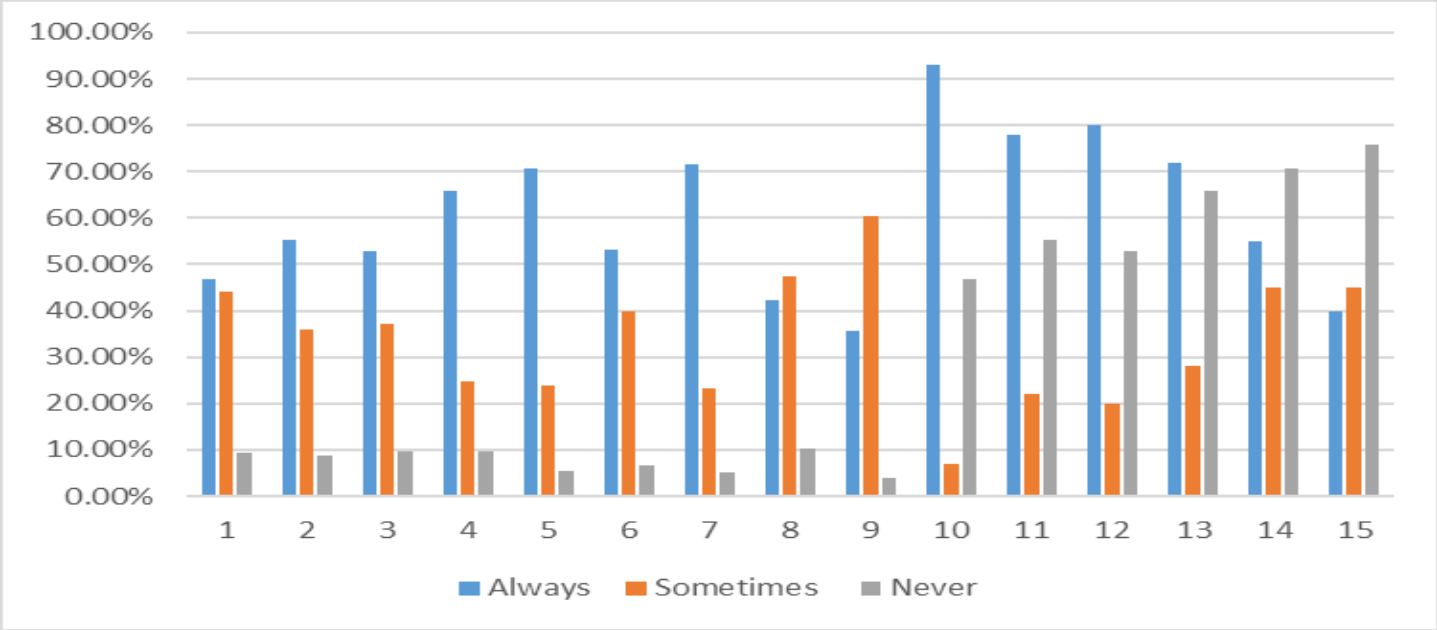
Questionnaire	Always	Sometimes	Never
1. Difficulty in remembering peoples name or phone number.	46.7%	44.0%	9.3%
2. Difficulty in remembering location of everyday items?	55.3%	36.0%	8.7%
3. Difficulty in remembering phone passwords?	53.0%	37.3%	9.7%
4. Difficulty in remembering, “what was I about to do next”?	65.7%	24.7%	9.7%
5. Forgetting about previous plans and hence double booking yourself ?	70.7%	24.0%	5.3%
6. Asking a person to repeat the instructions as you forget what was said first time around?	53.3%	40.0%	6.7%
7. Difficulty in remembering about your parked car or bike?	71.7%	23.3%	5.0%
8. Forgetting important dates like Birthday and Anniversary.	42.3%	47.3%	10.3%
9. Forget to submit important assignment?	35.7%	60.3%	4.0%

Table 2: Perceptions about Memory and Digital Use among undergraduate Students

	Questionnaire	Yes	No
1.	I believe my memory would improve if I used my digital devices less often	93%	07%
2.	I intentionally avoid memorizing things because I know I can find them online.	78%	22%

3.	I've forgotten something important (e.g., an assignment or event) because I didn't get a digital reminder	80%	20%
4.	I am aware that relying too much on digital devices can affect my memory.	72%	28%
5.	I try to remember information before resorting to my device.	55%	45%

Graph 1: Screen time (amount of time spent device with a screen such as television, Smartphone, videogame per day)



From the above-collected data students with a screen time for less than 2 hours was 15.10%, 2-4 hours was 30.03%, 4-6 hours was 32%, and more than 6 hours was 22.60%. We understand that we receive 172 (57.4%) responses from MBBS, 48 (16%) responses from BDS, 51 (17%) from a pharmacy, 3 (1%) from BPT, 17 (5.6%) from commerce, and 9 (3%) from engineering making it a grand total of 300 students.

Among the students, we observed that the students were more susceptible to digital amnesia. We targeted students completing their undergraduate degree and asked them a series of questions after which we analyzed. To the question of how many students had a difficulty in remembering their people's names or phone numbers 46.7% answered always and 44 0% answered sometime. 55.3% of students had a difficulty in remembering the location of their everyday items, as well as 53%, had difficulty remembering their phone password always. 65.7% students Difficulty in remembering "what was I about to do next" always, while 37.3%sometime. 65.7% students Difficulty in remembering "what was I about to do next" always and 24.7% students sometime.

Discussion

The findings of this study provide a comprehensive understanding of Digital Amnesia, a phenomenon emerging in the digital age where social media and digital technologies have profound, yet often overlooked, effects on the cognitive health of young adults. This reliance on technology, while convenient, comes at the cost of cognitive memory retention and critical thinking abilities. As a result, young adults, who are often more digitally immersed, are experiencing a gradual erosion of memory capacity, resulting in

difficulty recalling information they may have once been able to remember easily. This process of forgetting information that we no longer "need" to remember is what we term digital amnesia. While it may appear to be a trivial issue at first glance, its cumulative effects can have lasting consequences on intellectual, emotional, and psychological well-being. The study explored both the visible and hidden effects of social media use, revealing the complex interaction between technology, memory, attention, and mental health. The results underscore the significant role digital media plays in shaping cognitive and psychological outcomes, with implications for memory retention, critical thinking, and overall mental well-being. Young adults increasingly turn to their devices for quick answers to simple questions. This has led to a phenomenon where remembering a phone number, an address, or even a simple fact is no longer necessary when it's stored online. Our study also shows the 46.7% people had difficulty in remembering peoples name or phone number.

One of the primary findings of this study is the observable impact of digital media overuse on young adults' memory retention and recall. Participants who spent more time on social media reported increased difficulty in recalling simple facts, names, and dates. This aligns with previous research that suggests the constant access to information via digital devices reduces the need for individuals to commit information to memory. The "Google effect" or cognitive outsourcing was evident in participants who frequently relied on digital platforms to remember facts or store information, rather than engaging in deeper cognitive processing. Experts say Smartphone addiction could impair the brain's ability to retain new information and form new memories.

This supports earlier studies on the benefits of "digital detox" or taking breaks from screen exposure, which has been shown to improve cognitive flexibility, reduce mental fatigue, and enhance long-term memory retention. The findings suggest that limiting the constant stream of information and reducing digital distractions can have a rejuvenating effect on cognitive abilities, providing a clearer mental space for learning, problem-solving, and memory consolidation. However, it is essential to recognize that a digital detox alone may not be sufficient for long-term cognitive improvement. A sustained, mindful approach to technology use is necessary to ensure that young adults can balance the benefits of digital media with the need for deeper cognitive engagement. This study advocates for more intentional social media use, where young adults prioritize meaningful, purposeful interactions over passive consumption, and engage in activities that promote memory retention and critical thinking.

Conclusion

Youth should be encouraged to practice digital break everyday by disconnecting from the online world and focus on other healthy lifestyle such as doing physical activities, and adequate time with family. These health-promoting behaviors might help them diminish digital amnesia and improve their sleep quality. They can also achieve harmony between their online and offline activities by taking a brief break from their online platform. The better students understand their strengths and limitations of usage of digital devices, the better they will be able to master their gadgets. Moreover, having a practice of sleeping consistently would improve their cognitive, affective and behavioral aspects.

This study sheds light on the emerging phenomenon of Digital Amnesia, revealing that the overuse of digital media, particularly social media, has deep and hidden effects on memory, attention, and cognitive function in young adults. While digital tools provide convenience and access to information, they can undermine cognitive processes and emotional well-being when used excessively. By adopting strategies such as digital detox, mindful media consumption, and promoting in-person interactions, young adults can reduce the detrimental effects of Digital Amnesia and foster healthier cognitive habits in the digital age

References

1. Dirin A, Alamäki A, Suomala J. Digital Amnesia and Personal Dependency on Smart Devices: A Challenge for Artificial Intelligence. In Ketamo, H. & O'Rourke, P, editors: Proceedings of Fake Intelligence Online Summit 2019, May 7, Pori, Finland. 2019:31–36.
2. Harkin L, Daria J, Kuss. My smartphone is an extension of myself: A holistic qualitative exploration of the impact of using a smartphone. 2021;10(1):28–38. 10.1037/PPM0000278.
3. Theocharis A, Antonopoulos V, Christodoulou NG. Somatic symptoms associated with mental distress during the COVID-19 pandemic: A systematic review. Australas Psychiatry. 2023;31(2):147–156. 10.1177/10398562231156380.
4. Korte M. The impact of the digital revolution on human brain and behavior: Where do we stand? Dialog Clin Neurosci. 2020;22(2):101–11.
5. Sperling EL, Hulett JM, Sherwin LB, Thompson S, Bettencourt BA. Prevalence, characteristics and measurement of somatic symptoms related to mental health in medical students: A scoping review. Ann Med. 2023;55(2). 10.1080/07853890.2023.2242781.
6. Dirin A, Alamäki A, Suomala J. Digital Amnesia and Personal Dependency on Smart Devices: A Challenge for Artificial Intelligence. In Ketamo, H. & O'Rourke, P, editors: Proceedings of Fake Intelligence Online Summit 2019, May 7, Pori, Finland. 2019:31–36.
7. Chen, Chongyang, Xiang Gong, Matthew K. O. Lee, Kem Z. K. Zhang, Sesia J. Zhao, and Liang Liang. "Examining The Effects of Motives and Gender Differences on Smartphone Addiction." Computers in Human Behavior 75(2017): 892-902.
8. Lapierre, Matthew. "Smartphones and Loneliness in Love: Testing Links between Smartphone Engagement, Loneliness, and Relational Health." Psychology of Popular Media 9, no. 2 (2020): 125-34.
9. Cerutti R., Spensieri V., Amendola S., Presaghi F., Fontana A., Faedda N., Guidetti V. Sleep disturbances partially mediate the association between problematic internet use and somatic symptomatology in adolescence. Curr. Psychol. 2021;40(9):4581–4589.
10. Mistry K.B., Minkovitz C.S., Strobino D.M., Borzekowski D.L. Children's television exposure and behavioral and social outcomes at 5.5 years: does timing of exposure matter? Pediatrics. 2007;120(4):762–769. doi: 10.1542/peds.2006-3573.
11. Simor P., Polner B., Báthori N., Sifuentes-Ortega R., Van Roy A., Albajara Sáenz A., et al. Home confinement during the COVID-19: day-to-day associations of sleep quality with rumination, psychotic-like experiences, and somatic symptoms.

Sleep. 2021;44(7): zsab029. doi: 10.1093/ sleep/zsab029.

12. Swing E.L., Gentile D.A., Anderson C.A., Walsh D.A. Television and video game exposure and the development of attention problems. Pediatrics. 2010;126(2):214–221. doi: 10.1542/peds.2009-1508.
13. He Q, Turel O, Bechara A. Brain anatomy alterations associated with Social Networking Site (SNS) addiction. Sci Rep. 2017;7:45064. doi: 10.1038/srep45064.
14. Thomee S., Härenstam A., Hagberg M. Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults-a prospective cohort study. BMC Publ. Health. 2011;11(1):1–11. doi: 10.1186/1471-2458-11-66.
15. Toussaint A., Murray A.M., Voigt K., Herzog A., Gierk B., Kroenke K., et al. Development and validation of the somatic symptom disorder–b criteria scale (SSD-12) Psychosom. Med. 2016;78(1):5–12. doi: 10.1097/PSY.0000000000000240.
16. Brown TI, Uncapher MR, Chow TE, Eberhardt JL, Wagner AD. Cognitive control, attention, and the other race effect in memory. PloS ONE. 2017;12(3): e0173579. doi: 10.1371/ journal. pone.0173579.